

1

## SENSORY MONITOR WITH EMBEDDED MESSAGING ELEMENT

### BACKGROUND OF THE INVENTION

The present invention relates to embedded messages that create a response in a viewer, and more particularly to a method and device for producing such messages, determining if such messages are effective, and tailoring such messages to individual responses.

U.S. Pat. No. 5,027,208 describes a therapeutic subliminal imaging system wherein a selected subliminal message is synchronized with and added to an existing video signal containing a supraliminal message. The combined preexisting supraliminal messages can be displayed on a video screen. The desired subliminal message is provided by a preprogrammed chip that is inserted by the user into a compact video processing circuit that combines the two signals for viewing. The video processing system of the invention synchronizes the video signal containing the supraliminal message with a signal containing the desired subliminal message. The system then either lightens or darkens portions of the supraliminal message, in a manner that is not consciously perceptible to the viewer, to present the subliminal message.

U.S. Pat. No. 5,221,962 discloses a method and apparatus for presenting subliminal messages that allow a user to verify the content and presence of the message, and adjust the message obviousness. A VCR overlays the television signals, and the user can turn a video control to reduce the amount of attenuation and the obviousness of the overlaid images until the images become imperceptible, and thus subliminal.

U.S. Pat. No. 6,155,834 discloses a system to teach a student to instantly recognize words without having to sound them out or go through other processes such as explaining the definition of the word. The words however are not embedded and are displayed to the student for conscious recognition. A computer systematically and continuously adjusts the requirements for word perception and recognition based on characteristics and ongoing responses of the individual student in a way that increases the speed and accuracy of word recognition.

U.S. Pat. Nos. 5,027,208, 5,221,962 and 6,155,834 cited above are herein incorporated by reference herein.

As demonstrated by tachistoscopic experiments, sensory inputs are first registered outside of conscious recognition, i.e. in the subconscious. Tachistoscopic systems may be designed to alter the dwell time of rapidly flashing images, for example. The images, as the dwell time increases, or, as the contrast increases or signal attenuation decreases, eventually enter the consciousness of the viewer.

However, many messages provided by these systems are generally designed to communicate subconsciously, and, if effective at all, are not tailored to individual responses.

### SUMMARY OF THE PRESENT INVENTION

An object of the present invention is to permit creation of embedded messages that create a response in a viewer.

Another alternate or additional object of the present invention is to permit automatic tailoring of embedded messages to individuals.

The present invention provides a system for measuring human perception at edges of awareness comprising:

- a message transmitter providing embedded messages embedded in supraliminal information;

2

a sensory monitor for measuring reaction in an individual to the embedded messages; and

a control system connected to the message transmitter, the control system receiving an input from the sensory monitor, the control system including a real-time feedback control loop altering a perceptibility of the embedded messages with respect to the supraliminal messages as a function of the sensory monitor input.

Also provided is a method for providing embedded messages embedded in supraliminal messages comprising the steps of:

- providing embedded messages with supraliminal information;

- measuring a reaction in an individual to the embedded messages; and

- automatically controlling the embedded messages as a function of the reaction using a feedback loop, the feedback loop altering a perceptibility of the embedded messages with respect to the supraliminal messages as a function of the reaction.

The system and method of the present invention can monitor human awareness both below and above the liminal threshold of sensory awareness. Monitoring of sensory awareness is performed by a software component operating on a real-time operating system coupled to a sensor array. The sensor array collects data from sensors monitoring user reaction, or a user response, to images (or other sensory data) presented to the user. The sensory data presented to the user is presented at or near the boundary between conscious and subconscious sensory recognition.

Monitoring of user reception reaction allows the system to gauge efficacy of the sensory data in generating a response. Messaging elements are initially generated with physical characteristics registered below the threshold of conscious awareness, thereby broadening possibilities for communicating information or messages, for example by embedding them in other images or on a visual field.

Real-time feedback monitoring provides the basis for dynamically altering the physical characteristics of messaging elements as a function of user response as determined by the sensory monitor.

Messaging elements are, therefore, dynamically altered as a function of continuous monitoring of individual sensory recognition.

The system may be designed to continuously alter the physical characteristics of the messaging elements, and measure their impact, as a means of regulating the system to user-specific sensitivities. Messaging elements are varied using physical variables forming the boundaries between conscious and subconscious sensory awareness, such as alteration of duration, frequency, movement and non-time dependent variables such as color, contrast and pattern masking of the messaging elements. The system thus is dynamically tuned to user-specific sensory sensitivities both below the liminal threshold, and, if required, above the liminal threshold, to ensure that the user is responding to the messaging elements.

The dynamically and continuously constructed messaging elements are embedded within a sensory field of the user, such as a HUD or CRT display, or a visual field such as a windshield of an airplane. The embedded messaging elements may range from simple pictorial examples with literal meaning to complex patterns forming symbolic registers with latent, or metaphorical, meaning. Applications for the integrated system include medical diagnostic tools, warning systems for machine or process operators and training tools.

The present invention thus provides for dynamic control and placement of embedded messages by altering the physi-